

What is claimed is:

1 1. A coaxial connector with a switch, the coaxial connector comprising:
2 a normally closed terminal and a common terminal whose respective contact portions
3 contact and move apart from each other in association with removal and insertion of a mating
4 connector;
5 an insulator for holding the normally closed terminal and the common terminal; and
6 a shell for holding the insulator from outside,
7 a connecting portion of the normally closed terminal, a connecting portion of the common
8 terminal, and a pair of connecting portions of the shell protruding in a horizontal direction to be
9 placed on corresponding lands formed on a surface of a printed wiring board near an edge thereof,
10 the coaxial connector being mounted onto the edge of the printed wiring board through soldering of
11 each connecting portion of the normally closed terminal, the common terminal, and the shell,
12 wherein:
13 the pair of connecting portions of the shell are placed at horizontally symmetric positions
14 with respect to a vertical plane passing a center or nearly the center of the shell;
15 the connecting portion of the normally closed terminal and the connecting portion of the
16 common terminal are placed at horizontally symmetric positions with respect to the vertical plane;
17 and
18 a top surface and a bottom surface of each of the connecting portions of the normally
19 closed terminal, the common terminal, and the shell are formed into vertically symmetric shapes
20 with respect to a horizontal plane passing centers or nearly the centers of the connecting portions.

1 2. The coaxial connector with a switch according to Claim 1, wherein:

2 the shell comprises a main body portion allowed to engage with two kinds of notch
3 portions having different shapes, each formed by making a notch of the shape in the edge of the
4 printed wiring board;

5 the main body portion comprises an upper main body portion and a lower main body
6 portion partitioned vertically at the horizontal plane passing the centers or nearly the centers of the
7 connecting portions; and

8 one of the upper main body portion and the lower main body portion is formed into a shape
9 allowed to engage with only one of the two kinds of notch portions, and the other is formed into a
10 shape allowed to engage with only the other one of the two kinds of notch portions.

1 3. The coaxial connector with a switch according to Claim 2, wherein:

2 one of the two kinds of notch portions is formed to have an opening width of a constant
3 value V from an opening side to an inner side, and the other is formed to have two steps having an
4 opening width V_1 , where $V_1 > V$, on the opening side and an opening width V_2 , where $V_2 < V$,
5 on the inner side;

6 the lower main body portion is formed to have a breadth of a constant value W slightly less
7 than V ; and

8 the upper main body portion is formed to have two steps having a breadth W_2 , which takes
9 a value slightly less than V_2 , on an engagement tip end side and a breadth W_1 , which takes a value
10 slightly less than V_1 , on an engagement rear end side.

1 4. The coaxial connector with a switch according to Claim 1, wherein the horizontal plane
2 passing the centers or nearly the centers of the connecting portions is a horizontal plane passing the
3 center or nearly the center of the shell.

1 5. The coaxial connector with a switch according to Claim 4, wherein:
2 the shell comprises a main body portion allowed to engage with two kinds of notch
3 portions having different shapes, each formed by making a notch of the shape in the edge of the
4 printed wiring board;

5 the main body portion comprises an upper main body portion and a lower main body
6 portion partitioned vertically at the horizontal plane passing the centers or nearly the centers of the
7 connecting portions; and

8 one of the upper main body portion and the lower main body portion is formed into a shape
9 allowed to engage with only one of the two kinds of notch portions, and the other is formed into a
10 shape allowed to engage with only the other one of the two kinds of notch portions.

1 6. The coaxial connector with a switch according to Claim 5, wherein:

2 one of the two kinds of notch portions is formed to have an opening width of a constant
3 value V from an opening side to an inner side, and the other is formed to have two steps having an
4 opening width V_1 , where $V_1 > V$, on the opening side and an opening width V_2 , where $V_2 < V$,
5 on the inner side;

6 the lower main body portion is formed to have a breadth of a constant value W slightly less
7 than V ; and

the upper main body portion is formed to have two steps having a breadth W_2 , which takes a value slightly less than V_2 , on an engagement tip end side and a breadth W_1 , which takes a value slightly less than V_1 , on an engagement rear end side.

7. A coaxial connector with a switch, the coaxial connector comprising:

a normally closed terminal and a common terminal whose respective contact portions contact and move apart from each other in association with removal and insertion of a mating connector;

an insulator for holding the normally closed terminal and the common terminal;

a shell for holding the insulator from outside; and

a housing for holding the shell from outside,

a connecting portion of the normally closed terminal, a connecting portion of the common terminal, and a pair of connecting portions of the shell protruding in a horizontal direction to be placed on corresponding lands formed on a surface of a printed wiring board near an edge thereof, the coaxial connector being mounted onto the edge of the printed wiring board through soldering of each connecting portion of the normally closed terminal, the common terminal, and the shell, wherein:

the pair of connecting portions of the shell are placed at horizontally symmetric positions with respect to a vertical plane passing a center or nearly the center of the housing;

the connecting portion of the normally closed terminal and the connecting portion of the common terminal are placed at horizontally symmetric positions with respect to the vertical plane; and

19 a top surface and a bottom surface of each of the connecting portions of the normally
20 closed terminal, the common terminal, and the shell are formed into vertically symmetric shapes
21 with respect to a horizontal plane passing centers or nearly the centers of the connecting portions.

1 8. The coaxial connector with a switch according to Claim 7, wherein the housing further
2 comprises key slots allowed to engage with key protrusions on the mating connector.

1 9. The coaxial connector with a switch according to Claim 7, wherein:
2 the housing comprises a main body portion allowed to engage with two kinds of notch
3 portions having different shapes, each formed by making a notch of the shape in the edge of the
4 printed wiring board;

5 the main body portion comprises an upper main body portion and a lower main body
6 portion partitioned vertically at the horizontal plane passing the centers or nearly the centers of the
7 connecting portions; and

8 one of the upper main body portion and the lower main body portion is formed into a shape
9 allowed to engage with only one of the two kinds of notch portions, and the other is formed into a
10 shape allowed to engage with only the other one of the two kinds of notch portions.

1 10. The coaxial connector with a switch according to Claim 9, wherein the housing further
2 comprises key slots allowed to engage with key protrusions on the mating connector.

1 11. The coaxial connector with a switch according to Claim 9, wherein:

2 one of the two kinds of notch portions is formed to have an opening width of a constant
3 value V from an opening side to an inner side, and the other is formed to have two steps having an
4 opening width $V1$, where $V1 > V$, on the opening side and an opening width $V2$, where $V2 < V$,
5 on the inner side;

6 the lower main body portion is formed to have a breadth of a constant value W slightly less
7 than V ; and

8 the upper main body portion is formed to have two steps having a breadth $W2$, which takes
9 a value slightly less than $V2$, on an engagement tip end side and a breadth $W1$, which takes a value
10 slightly less than $V1$, on an engagement rear end side.

1 12. The coaxial connector with a switch according to Claim 11, wherein the housing
2 further comprises key slots allowed to engage with key protrusions on the mating connector.

1 13. The coaxial connector with a switch according to Claim 7, wherein the horizontal plane
2 passing the centers or nearly the centers of the connecting portions is a horizontal plane passing the
3 center or nearly the center of the housing.

1 14. The coaxial connector with a switch according to Claim 13, wherein the housing
2 further comprises key slots allowed to engage with key protrusions on the mating connector.

1 15. The coaxial connector with a switch according to Claim 13, wherein:

the housing comprises a main body portion allowed to engage with two kinds of notch portions having different shapes, each formed by making a notch of the shape in the edge of the printed wiring board;

the main body portion comprises an upper main body portion and a lower main body portion partitioned vertically at the horizontal plane passing the centers or nearly the centers of the connecting portions; and

one of the upper main body portion and the lower main body portion is formed into a shape allowed to engage with only one of the two kinds of notch portions, and the other is formed into a shape allowed to engage with only the other one of the two kinds of notch portions.

16. The coaxial connector with a switch according to Claim 15, wherein the housing further comprises key slots allowed to engage with key protrusions on the mating connector.

17. The coaxial connector with a switch according to Claim 15, wherein:

one of the two kinds of notch portions is formed to have an opening width of a constant value V from an opening side to an inner side, and the other is formed to have two steps having an opening width V_1 , where $V_1 > V$, on the opening side and an opening width V_2 , where $V_2 < V$, on the inner side;

the lower main body portion is formed to have a breadth of a constant value W slightly less than V ; and

the upper main body portion is formed to have two steps having a breadth W_2 , which takes a value slightly less than V_2 , on an engagement tip end side and a breadth W_1 , which takes a value slightly less than V_1 , on an engagement rear end side.

1 18. The coaxial connector with a switch according to Claim 17, wherein the housing
2 further comprises key slots allowed to engage with key protrusions on the mating connector.